

REQUEST FOR RECONSIDERATION	Application #	09/913,860
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	First Inventor	MASUDA
	Art Unit	1764
	Examiner	Nguyen, Tam M.
	Docket #	P07340US00/BAS

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S I R:

In response to the Advisory Action mailed September 19, 2006, and in conjunction with the RCE and Petition for Suspension of Action filed October 27, 2006, Applicants submit the following Request for Reconsideration.

In the final Office Action mailed May 3, 2006, claims 7-12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over JP-06-228570 (hereinafter "JP '570"), in view of Masuda et al. (U.S. Patent No. 6,042,798) (hereinafter "Masuda") and Logsdon et al. (U.S. Patent No. 4,876,402) (hereinafter "Logsdon"). In Applicants' Request for Reconsideration filed on September 5, 2006, Applicants distinguished the present invention over the cited prior art, in part, by arguing that it would not have been obvious for one of ordinary skill in the art to combine JP '570, which discloses a desulfurization method of a feedstock hydrocarbon, with Logsdon, which discloses an aldehyde hydrogenation catalyst.

In an Advisory Action mailed September 19, 2006, in response to the Request for Reconsideration, the Examiner stated that "The argument that the desulfurizing agent of the JP patent is not a catalyst for promoting a chemical reaction as suggested by Logsdon but a sulfur adsorbing material is not persuasive because the examiner relied upon Logsdon to teach a method of making a catalyst. One of skill in the art would

employ any method of making the catalyst including the method of Logsdon.” Further, in the September 19, 2006 Advisory Action, the Examiner stated, “The argument that one of skill in the art would form a desulfurizing agent by co-precipitation not impregnation is not persuasive because the test for obviousness is what the teachings and disclosures of the prior art would have suggested to one of ordinary skill in the art...”

Based on the statements made in the Advisory Action, it is respectfully submitted that remarks presented in the Request for Reconsideration have not been fully appreciated. Accordingly, Applicants submit this present Request for Reconsideration to clarify distinctions presented in the first Request for Reconsideration of September 5, 2006 and to correct any misinterpretation or misunderstanding of what was previously presented.

Claims 7-12 are not obvious from JP '570, in view of Masuda and Logsdon, as their combined teachings fail to teach or suggest all elements of the claimed method, namely the present desulfurizing agent produced by the claimed method. Furthermore, there fails to be any motivation within the references, including Logsdon, to motivate one of ordinary skill in the art to combine their dissimilar teachings to make the present method obvious.

With regard to the combined teachings failing to make obvious the claimed desulfurizing agent, it is important to note that the present invention is directed to a hydrocarbon desulfurizing method. The present method does not relate to a catalyst for promoting a chemical reaction and a method of making a catalyst. More importantly, a

desulfurizing agent is not a catalyst. Although Logsdon discloses a method for producing an aldehyde hydrogenation catalyst, a "catalyst" is not a desulfurizing agent.

A "catalyst" is defined in dictionaries and textbooks as "a substance that increases the rate of a chemical reaction without itself undergoing any permanent chemical change" (New Oxford American Dictionary, 2001). In contrast, the present desulfurizing agent adsorbs sulfur compound itself, resulting in chemical change in the composition of the agent. Therefore, catalysts and desulfurizing agents are totally different compounds in their intended uses, functions and chemical structures. Consequently, one of ordinary skill in the art would not apply a method of making a catalyst (e.g., Logsdon) to a hydrocarbon desulfurization method (JP '570).

Furthermore, absent some explicit disclosure, it would be exceedingly difficult for a person of ordinary skill in the art to develop a method of desulfurization of a hydrocarbon by combining a method for producing a catalyst for hydrogenation of aldehyde with a desulfurization method because the method for producing a catalyst for hydrogenation of an aldehyde is totally unrelated to the desulfurization method. Nowhere in the cited references is there any disclosure as to how one would use a catalyst in a desulfurization method. Therefore, one of ordinary skill in the art would not combine the teachings of Logsdon with JP '570 to arrive at the present desulfurization method.

Moreover, the present invention solves a problem in the art of desulfurization, which is in no way taught or suggested by the individual or combined references cited. For example, the present desulfurization method inhibits a methane forming reaction which is disclosed in the present specification, as follows:

However, there is a serious impediment to using iron type desulfurizing agents or nickel type desulfurizing agents as is in the desulfurization of steam reforming processes. Specifically, desulfurization in ordinary steam reforming processes is performed in the presence of hydrogen, and this hydrogen is supplied by recycled gas from the outlet port of a reformer. This recycled gas contains CO and/or CO₂ as well as hydrogen. Accordingly, in the presence of an iron type or nickel type desulfurizing agent, a reaction of hydrogen with CO and CO₂ (methane forming reaction) occurs, which is accompanied by the problem of a large amount of heat generation"

(see the specification, page 4, line 21 to page 5, line 7).

Thus, the present invention solves the problem of a large amount of heat generation. The present desulfurization method solves a problem in the art which is not disclosed or suggested in any of the cited references. In particular, the claimed invention is directed to a hydrocarbon desulfurization method in which a hydrocarbon raw material is desulfurized in the presence of hydrogen using the specific desulfurizing agent obtained by the method of claim 1.

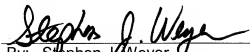
Accordingly, in the present invention, the heat generation can be avoided or suppressed. This fact is clear from the Example of the present specification. For example, by comparing the results shown in Example 6 and Comparative Example 5, it is evident that there is no increase in temperature due to a methane forming reaction in Example 6, whereas there is a temperature rise caused by a methane forming reaction in Comparative Example 5. Though the numerical value of the temperature rise is not mentioned in the present specification, the value is about 20-30°C.

Based on the foregoing, the prior art fails to teach or suggest the present desulfurization method and there fails to be any motivation to combine the references cited to make the present desulfurization method obvious. Accordingly, Applicants respectfully request that the rejection to claims 7-12 be withdrawn.

In view of the foregoing, Applicants respectfully submit that the present application is in condition for allowance.

Respectfully submitted,

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